

Appl. No. 09/297,591
 Atty. Docket No. JA171
 Amdt. dated 03/28/2005
 Reply to Office Action of 12/28/2004
 Customer No. 27752

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (currently amended): A hair styling composition comprising by weight of the concentrate:

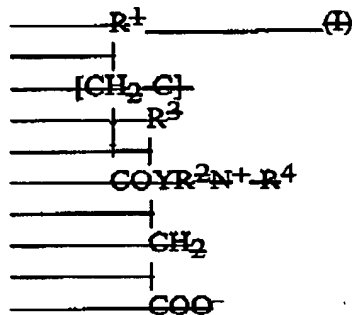
(a) from about 0.2% to about 5% of an amphoteric polymer wherein the amphoteric polymer is selected from polymers comprising units derived from: the group consisting of:

i) at least one monomer chosen from amongst acrylamides or methacrylamides substituted on the nitrogen by an alkyl radical,

ii) at least one acid comonomer containing one or more reactive carboxyl groups, and

iii) at least one basic comonomer;

1) ~~polymers of betainised dialkylaminoalkyl (meth)acrylate or dialkylaminoalkyl (meth)acrylamide containing at least units of the formula:~~



~~wherein R¹ denotes a hydrogen atom or a methyl group, R² denotes an alkylene group having 1 to 4 carbon atoms, Y denotes O or NH and R³ and R⁴ independently of one another denote hydrogen or alkyl having 1 to 4 carbon atoms, and one cationic derivative consisting of a cationic surfactant containing at least one nitrogen atom joined to one or more fatty chains and optionally quaternised, or consisting of a cationic polymer of the polyamine, polyaminopolyamide or poly (quaternary ammonium) type, the amine or ammonium groups forming part of the polymer chain or being joined thereto;~~

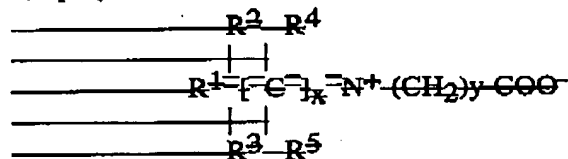
2) ~~polymers resulting from the copolymerisation of a vinyl monomer carrying a carboxyl group, and a basic monomer which is a substituted vinyl compound containing at least one basic nitrogen atom;~~

Appl. No. 09/297,591
 Arry. Docket No. JA171
 Amdt. dated 03/28/2005
 Reply to Office Action of 12/28/2004
 Customer No. 27752

3) ~~polymers containing units derived from:~~

- ~~i) at least one monomer chosen from amongst acrylamides or methacrylamides substituted on the nitrogen by an alkyl radical;~~
- ~~ii) at least one acid comonomer containing one or more reactive carboxyl groups; and~~
- ~~iii) at least one basic comonomer, with primary, secondary and tertiary amine substituents and quaternary ammonium substituents, of acrylic and methacrylic acids, and the product resulting from the quaternisation of dimethylaminoethyl methacrylate with dimethyl or diethyl sulphate;~~

4) ~~polymers containing zwitterionic units derived from the formula:~~



~~wherein R¹ denotes a polymerisable unsaturated group, x and y independently represent an integer from 1 to 3, R² and R³ independently represent hydrogen, methyl, ethyl or propyl, and R⁴ and R⁵ independently represent a hydrogen atom or an alkyl radical such that the sum of the carbon atoms in R⁴ and R⁵ does not exceed 10; and~~

and mixtures thereof;

- (b) from about 0.2% to about 5% of an anionic polymer;
- (c) from about 0.2% to about 5% of a cationic polymer; and
- (d) a solvent;

wherein the total of components (a), (b), and (c) is from about 0.6 to about 15% by weight of the concentrate, and wherein the level of the component comprised at the lowest level among components (a), (b), and (c) is at least about 5% of that of the component comprised at the highest level among components (a), (b), and (c).

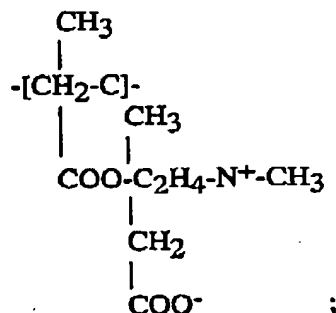
2. (original): The hair styling composition according to Claim 1 wherein the composition is in the form of a mousse further comprising from about 0.02% to about 1% by weight of the concentrate of a nonionic surfactant having a total HLB value by Griffin method of at least 12.

3. (original): The hair styling composition according to Claim 1 wherein the composition is in the form of a hair spray.

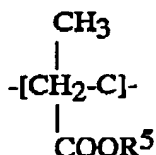
Appl. No. 09/297,591
 Atty. Docket No. JA171
 Amdt. dated 03/28/2005
 Reply to Office Action of 12/28/2004
 Customer No. 27752

4. (previously presented): The hair styling composition according to Claim 1, wherein said amphoteric polymer comprises units selected from the group consisting of:

(a)

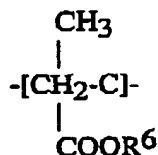


(b)



wherein R⁵ denotes an alkyl group having 4 to 18 carbon atoms;

(c)



wherein R⁶ denotes an alkyl group having 1 to 3 carbon atoms; and

(d) mixtures thereof; wherein if (b) is present, then (a) is present and if (c) is present then (a) and (b) are present.

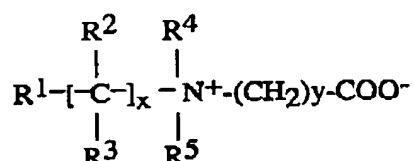
5. (previously presented): The hair styling composition according to Claim 4, wherein said amphoteric polymer comprises, relative to the total weight of said polymer:

- (a) from about 25% to about 45% by weight, of units designated "a";
- (b) from about 5% to about 65% by weight, of units designated "b";
- (c) and from about 0% to about 50% by weight, of units "c".

Appl. No. 09/297,591
 Atty. Docket No. JA171
 Amdt. dated 03/28/2005
 Reply to Office Action of 12/28/2004
 Customer No. 27752

6. (previously presented): The hair styling composition according to Claim 5, wherein said amphoteric polymer has an average molecular weight from about 70,000 to about 90,000.

7. (previously presented): The hair styling composition according to Claim 1, wherein said amphoteric polymer comprises zwitterionic units which conform to the following formula:



wherein R^1 denotes a polymerizable unsaturated group, selected from the group consisting of acrylate, methacrylate, acrylamide and methacrylamide;

wherein x and y independently denote an integer from 1 to 3;

wherein R^2 and R^3 independently denote hydrogen, methyl, ethyl or propyl;

and wherein R^4 and R^5 independently denote a hydrogen atom or an alkyl radical

wherein the sum of the carbon atoms in R^4 and R^5 does not exceed 10.

8. (previously presented): The hair styling composition according to Claim 1, wherein said anionic polymer is selected from the group consisting of homopolymers of acrylic acid, homopolymers of methacrylic acid, copolymer of acrylic acid, copolymers of methacrylic acid, and salts thereof.

9. (previously presented): The hair styling composition according to Claim 1, wherein said cationic polymer is selected from the group consisting of dimethyldiallylammonium chloride homopolymer, dimethyldiallylammonium chloride/acrylamide copolymer, and mixtures thereof.

10. (previously presented): The hair styling composition according to Claim 1, wherein said cationic polymer is selected from the group consisting of quaternium-37, quaternium-38, quaternium-42, quaternium-49; and mixtures thereof.

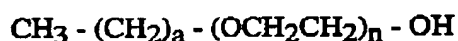
Appl. No. 09/297,591
 Auy. Docket No. JA171
 Amdt. dated 03/28/2005
 Reply to Office Action of 12/28/2004
 Customer No. 27752

11. (previously presented): The hair styling composition according to Claim 1, wherein said cationic polymer is polyquaternium-4.

12. (previously presented): The hair styling composition according to Claim 1, wherein said solvent is selected from the group consisting of water, C1 to C6 alcohols, propylene glycol, hexylene glycol, glycerin, propane-diol, and mixtures thereof.

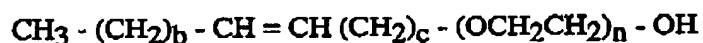
13. (previously presented): The hair styling composition according to Claim 1, further comprising a non-ionic surfactant selected from the group consisting of:

(a) Polyoxyethylene alkyl ethers of alkyl alcohols having the following structure:



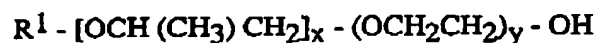
wherein a has an average value from 9 to 21; and n has an average value from 2 to 200;

(b) Polyoxyethylene alkenyl ethers having the following structure:



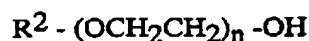
wherein b has an average value from 1 to 10; c has an average value from 1 to 10; and n has an average value from 2 to 200;

(c) Polyoxypropylene polyoxyethylene alkyl or alkenyl or iso-alkyl or iso-alkenyl or dimethylpolysiloxane ether having the following structure:



wherein R¹ is selected from the group consisting of alkyl, alkenyl, iso-alkyl alkenyl, and dimethylpolysiloxane derivatives; x has an average value from 2 to 100; and y has an average value from 2 to 100;

(d) Polyoxyethylene long chain alkyl fatty acid or benzene derivative ethers having the following structure:



Appl. No. 09/297,591
Atty. Docket No. JA171
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Reply to Office Action of 12/28/2004
Customer No. 27752

wherein R^2 is selected from the group consisting of castor oil triglyceride castorate, cholesterol, coconut oil triglyceride cocoate, alkyl phenol, glyceryl laurate, glyceryl oleate, glyceryl cocoate, glyceryl isostearate, glyceryl stearate, hydrogenated castor oil triglyceride hydrogenated castorate, hydrogenated lanolin, nonyl phenyl and dimethylpolysiloxane derivatives; and wherein n has an average value from 2 to 200;

(e) Polyoxyethylene alkyl, or alkenyl ethers having the following structure:



wherein R^3 and R^4 are independently selected from the group consisting of alkyl, iso-alkyl, and alkenyl; and n has an average value from 2 to 200;

(f) Polyoxypropylene alkyl, iso-alkenyl or long chain alkyl fatty acid ethers having the following structure:



wherein R^5 is selected from the group consisting of alkyl, iso-alkyl and alkenyl; and n has an average value of 2 to 200; and

(g) mixtures thereof.